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#### **4.2.2. Quality Assurance (QA) and Quality Control (QC)** (continued)

Performing QC is the process of inspecting and measuring the deliverable against the quality requirements. QC activities are performed throughout the project and involve the measurement of 'planned' versus 'actual' results.

The planned results, or acceptance criteria, are defined during the planning phase of a project. As the deliverables are produced, they are measured with actual results. As long as the actual results are within the tolerance range, or acceptable variance, then the deliverable is in conformance. If the actual results are outside the tolerance limits planned, then the deliverable is in non-conformance and follows a disposition process. The disposition process determines if the deliverable requires reworking, scrapping, or accepting through a change request process.

QC activities can involve, but are not limited to, the following:

- Inspection of project design, both internally and externally created
- Details drawing completeness and accuracy
- Designing input/output (I/O) points
- Bill of material (BOM) completeness and accuracy
- Vendor surveillance or inspection program
- Establishing inspection hold points for critical material
- Ensuring vendor is producing material within design limits
- Inspection of received materials against the design or order upon receipt
- Identifying that the correct part numbers, quantities, and items are delivered
- Implementing a disposition process for non-conforming materials

##### **4.2.2.1. Inspection and Test Plans (ITP) for Identified Activities**

ITPs are activity roadmaps with the procedures, skills, and tools needed to perform the sequential tasks, with control points for the inspections and data identification.

#### **4.2.2.2. Skill Sets and Qualifications**

Identify in the quality plan the necessary skill sets and qualifications to perform the identified tasks.

#### **4.2.2.1. Resources**

Identify in the quality plan the necessary resources to execute the plan. Resources may include workforce, equipment, documentation, software, hardware, and logistical needs.

### **4.3. Sustaining Results and Continuous Improvement**

#### **4.3.1. Monitor, Control, and Improve**

Monitor and control involves review of the QA and QC activities to ensure the deliverables are produced meeting the quality requirements. Controlling project quality helps ensure non-conformances are identified prior to project close. The benefits of meeting the project quality requirements are to be reviewed against the cost of quality from following the value added processes to meet or attempt to meet the quality requirements.

Tools and techniques utilized to monitor the project quality include, but are not limited to:

- Identification of deliverable non-conformance
- Control points
- Variance analysis
- ITPs with control points
- Project self-assessments
- Project audits
- Change management processes and associated change logs
- Performance reports
- Internal audits or daily walk downs

Review deliverable quality requirements on a defined periodic basis to ensure they are being met or the correct preventative actions are established. Additionally, use data reviews to use leading indicators, as well as lagging indicators, to determine action.

**4.3.2. Supplier or Contractor Quality Plan Assessments (Oversight and Assurances)**

All quality plan requirements are cascaded throughout the supply base and are ensured through documentation and verification.

**4.3.3. Documentation and Record Management (Data Package Requirements)**

All associated documentation and records are formalized and maintained throughout the project. All assurances are made to verify correct procedure usage, record integrity, and maintenance.

**4.3.4. CAPA System (Corrective Action/Preventive Action)**

An effective CAPA system is in place to both prevent issues from occurring and to identify issues and concerns that have occurred to ensure corrective action and to prevent recurrence.

**4.3.5. Communicate**

The process of communicating and consulting with key stakeholders on quality management status is facilitated through the use of project self-assessment, audit reports, inspection reports, and cost or schedule updates. This communication may also be part of a non-conformance or corrective action program. The team is to document and communicate the non-conformance, along with the associated corrective action, preventative action, and possible lessons learned. At a minimum, deviations from quality standards are required to be recorded on the project report monthly.